



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
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BIN C15700  
Seattle, WA 98115-0070

Refer to:  
OSB2002-0015-FEC

March 25, 2002

Mr. Fred Patron  
U.S. Department of Transportation  
Federal Highway Administration  
The Equitable Center, Suite 100  
530 Center Street NE  
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act  
Essential Fish Habitat Consultation on the Effects of a Bridge Construction Project on  
Hamilton Creek, South Santiam River, Linn County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed bridge replacement project on Hamilton Creek (Linn County) in the South Santiam River Basin, Oregon. The NMFS concludes in this Opinion that the proposed actions are not likely to jeopardize Upper Willamette River (UWR) steelhead (*Onchorynchus mykiss*), or UWR chinook salmon (*O. tshawytscha*), or adversely modify critical habitat for these species. As required by Section 7 of the ESA, NMFS included reasonable and prudent measures with nondiscretionary terms and conditions that NMFS believes are reasonable and appropriate to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on essential fish habitat for chinook salmon (*O. tshawytscha*) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation Management Act and implementing regulations at 50 CFR Part 600.

Please direct any questions regarding this consultation to Tom Loynes of my staff in the Oregon Habitat Branch at 503.231.6892.

Sincerely,

D. Robert Lohn  
Regional Administrator

cc: Rose Owens, ODOT  
Molly Cary, ODOT  
Nick Testa, ODOT  
Diana Hwang, USFWS  
Randy Reeve, ODOT  
Brian Bauman, ODOT



Endangered Species Act - Section 7 Consultation  
&  
Magnuson-Stevens Act  
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Proposed Hamilton Creek Bridge Replacement Project in the  
Hamilton Creek Drainage, South Santiam River Watershed  
Linn County, Oregon

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: March 25, 2002

Issued by:



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D. Robert Lohn  
Regional Administrator

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## TABLE OF CONTENTS

1. ENDANGERED SPECIES ACT .....	<a href="#"><u>1</u></a>
1.1 Background .....	<a href="#"><u>1</u></a>
1.2 Proposed Actions .....	<a href="#"><u>1</u></a>
1.2.1 Bridge Replacement .....	<a href="#"><u>1</u></a>
1.3 Biological Information and Critical Habitat .....	<a href="#"><u>4</u></a>
1.4 Evaluating Proposed Action .....	<a href="#"><u>5</u></a>
1.4.1 Biological Requirements .....	<a href="#"><u>6</u></a>
1.4.2 Environmental Baseline .....	<a href="#"><u>6</u></a>
1.5 Analysis of Effects .....	<a href="#"><u>7</u></a>
1.5.1 Effects of Proposed Action .....	<a href="#"><u>7</u></a>
1.5.2 Cumulative Effects .....	<a href="#"><u>9</u></a>
1.6 Conclusion .....	<a href="#"><u>10</u></a>
1.7 Reinitiation of Consultation .....	<a href="#"><u>10</u></a>
2. INCIDENTAL TAKE STATEMENT .....	<a href="#"><u>11</u></a>
2.1 Amount or Extent of Take .....	<a href="#"><u>11</u></a>
2.2 Reasonable and Prudent Measures .....	<a href="#"><u>11</u></a>
2.3 Terms and Conditions .....	<a href="#"><u>12</u></a>
3. MAGNUSON-STEVENSON ACT .....	<a href="#"><u>15</u></a>
3.1 Background .....	<a href="#"><u>15</u></a>
3.2 Magnuson-Stevens Fishery Conservation and Management Act .....	<a href="#"><u>15</u></a>
3.3 Identification of EFH .....	<a href="#"><u>16</u></a>
3.4 Proposed Action .....	<a href="#"><u>17</u></a>
3.5 Effects of Proposed Action .....	<a href="#"><u>17</u></a>
3.6 Conclusion .....	<a href="#"><u>17</u></a>
3.7 EFH Conservation Recommendations .....	<a href="#"><u>17</u></a>
3.8 Statutory Response Requirement .....	<a href="#"><u>17</u></a>
3.9 Consultation Renewal .....	<a href="#"><u>18</u></a>
4. LITERATURE CITED .....	<a href="#"><u>18</u></a>

## **1. ENDANGERED SPECIES ACT**

### **1.1 Background**

On January 18, 2002, the National Marine Fisheries Service (NMFS) received a letter, dated January 14, 2001, from the Federal Highway Administration (FHWA) requesting formal consultation on funding Oregon Department of Transportation's (ODOT) proposed bridge replacement project in the Hamilton Creek drainage (Hamilton Creek watershed, South Santiam River Basin) on Upper Willamette River (UWR) steelhead (*Oncorhynchus mykiss*) and UWR chinook salmon (*O. tshawytscha*) and their designated critical habitat. The letter and attached biological assessment (BA) described the proposed action, and concluded that the proposed action is "likely to adversely affect" UWR steelhead or UWR chinook salmon or their designated critical habitat. Juvenile UWR steelhead are likely to be rearing in the project area in Hamilton Creek during implementation of the bridge replacement and removal of the existing bridge. Although adult UWR chinook are not known to spawn in Hamilton Creek, some juvenile UWR chinook rearing is reasonably certain to occur in lower Hamilton Creek. Hamilton Creek is a tributary to the South Santiam River. The project is located in Linn County, Oregon.

The UWR steelhead was listed as threatened under the Endangered Species Act (ESA) by NMFS on March 25, 1999 (64 FR 14517). The UWR chinook salmon was listed as threatened under the ESA on March 24, 1999 (64 FR 14308). The NMFS designated critical habitat for UWR steelhead and UWR chinook salmon on February 16, 2000 (65 FR 7764) and issued protective regulations under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The proposed action is within designated critical habitat for UWR steelhead and UWR chinook salmon.

The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of UWR steelhead or UWR chinook salmon, or result in the destruction or adverse modification of designated critical habitat.

### **1.2 Proposed Actions**

#### **1.2.1 Bridge Replacement**

The proposed action is to fund the replacement of a bridge that is in poor structural condition. The existing three-span bridge would be replaced with a wider, single-span structure that would meet vertical alignment requirements. To accomplish this, the existing bridge and its abutments would be removed or demolished and replaced with a new, single-span structure supported by eight drilled shaft foundations (four per abutment).

The existing bridge consists of a three-span deck supported by four bents, none of which are protected by riprap. Timber piles driven near the top of the streambank support Bents 1 and 4 (the outermost bents). Bents 2 and 3 are 3-foot-wide concrete piers that run the width of the bridge and are anchored to the bedrock at the bottom of the channel. During all but the highest flow events, water is confined to the channel between the two concrete piers.

The proposed bridge is a single-span structure with a superstructure of eight standard, 0.76 meters (m) deep, precast slabs supported by concrete bent caps with cantilevered wing walls. The foundations consist of four 0.9 m drilled shafts located 0.6 m behind the outermost existing abutments (Bents 1 and 4). The proposed bridge is designed to have a width of 9.84 m, a length of 23 m, and a minimum vertical clearance above the 100-year flood event of 0.3 m.

Hydraulic analysis indicated the Hamilton Creek Bridge is not scour critical, therefore, no riprap is planned to armor the banks around the foundation. Drainage ditches are proposed to receive the stormwater discharge from the bridge deck, rather than it dumping directly over the stream bank at the end of the bridge. The drainage ditches on the north side of the bridge would be riprapped to prevent erosion of the steep, loamy bank. Class 25 riprap would cover approximately 26 m<sup>2</sup> of ditch area below the two-year flood elevation.

Roadside slopes would be constructed at a slope of 1:3 (vertical:horizontal), except behind the guard rails, where they would be constructed at a 1:2 (vertical:horizontal) slope.

### **1.2.2 Demolition and removal of existing bridge**

ODOT engineers would be responsible for submitting a demolition and containment plan in accordance with Section 00501.00 of amendments to standard specifications of the BA. This plan would be subject to the approval by Oregon Department of Fish and Wildlife (ODFW) and NMFS personnel. Specific criteria for bridge removal has been developed. Bridge removal will start by suspending an under-deck containment system (tarps or Eagle screen) from the existing piers by cables. The bridge superstructure will then be removed in pieces (including the bridge deck and beams), working from the bridge deck and ultimately the banks. De-watering measures will then be installed prior to beginning in-water work, and the substructure removed. Sufficient area around each pier will be isolated from flowing water by cofferdams. After the bridge decking is removed, the concrete piers in the channel would be demolished and removed. Any trenches or holes resulting from the removal of the piers would be filled with clean, river-run gravel. The timber piles (non-treated) supporting Bents 1 and 4 would be cut off two feet below ground level. During the removal of the bridge and its foundation, appropriate steps would be taken to capture and isolate debris from flowing water. All debris would be removed from the site and disposed of by the contractor at an approved upland disposal site.

### **1.2.3 Channel de-watering**

Sufficient area around each pier would be isolated from flowing water by cofferdams. The cofferdams would consist of plastic-lined sandbags or inflatable rubber bladders. The cofferdams would be placed around the piers adjacent to the streambanks. The active flowing stream would be permitted to continue flowing between the cofferdams. Any fish trapped within the isolated work area would be removed by a permitted ODOT or ODFW biologist and released into the stream. The isolated areas would then be dewatered before demolition and removal begin. The necessary materials for constructing a water diversion system would be stored onsite so that one could be deployed rapidly in the event of unexpected precipitation. Once the

containment area(s) are cleared of trapped fish, the water would be withdrawn to allow for removal of the concrete piers. The water will be pumped to a settling basin in an upland area away from the creek banks.

#### **1.2.4 Stormwater Treatment**

The width of the roadway would be increased by up to 3 m to accommodate two 3.3 m wide lanes and 1.2 m wide shoulders. This change in width would increase the amount of impervious surface in the project area by approximately 690 m<sup>2</sup>.

Stormwater from the proposed bridge would run to the south end of the bridge and drain through riprap-lined ditches into vegetated bio-swales. Stormwater draining from the existing road north of the bridge would run through riprap-lined ditches and then through vegetation before going over the bank. The ditches are lined with riprap because of the erosional nature of the loamy soils. Currently, stormwater from the existing bridge and roadway runs off the bridge into vegetated roadside ditches, which drain onto the streambanks.

#### **1.2.5 Vegetation clearing, excavation, and ground disturbance**

During road widening, approximately 0.5 acres would be cleared of vegetation and grubbed. Approximately 13 deciduous trees with diameters at breast height (dbh) ranging from 5-to-18 inches and numerous shrubs would be cleared from the project site. These trees and shrubs include red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), Himalayan blackberry (*Rubus discolor*), snowberry (*Symphoricarpos albus*), pacific ninebark (*Physocarpus capitatus*), striped coral root (*Corallorrhiza striata*), willow (*Salix spp.*), field horsetail (*Equisetum arvense*), nootka rose (*Rosa nutkana*), teasel (*Dipsacus sylvestris*), and several 15-to-30 cm dbh white oaks (*Quercus garryana*). Most of the trees to be cleared from the area are white oaks on the northwest corner of the site. They are more than 50 feet from the stream and above the two-year flood elevation on the north bank limiting their contribution to stream shading and large woody debris recruitment. Removal of five small (30 cm dbh) trees that grow immediately adjacent to the wetted channel, would slightly reduce stream shading.

#### **1.2.6 Compensatory Mitigation**

Riparian planting to replace the area cleared under the proposed project should result in localized improvement of riparian vegetation over the long term. In general, trees would be planted closer to the stream than the trees they are replacing. The resulting canopy would therefore have a greater moderating effect on stream temperatures. Trees removed would be replaced by a mix of native deciduous and coniferous trees, all planted close to the stream channel. Any shrubs cleared from the project site would be replaced by a similar assortment of shrubs planted among the trees in an attempt to approximate the native overstory and understory plant communities. Oregon white oak (14 trees) and red alder (5 trees) would be 6 feet in height when planted. The remaining 57 trees and shrubs (including 25 douglas fir, the dominant overstory tree species in

this area) would be 3 feet in height when planted. These trees and shrubs would be protected from browsing wildlife with orange poly safety fencing.

Approximately half the shrub and tree plantings would occur between the outside edge of the ditches and the edge of the right of way (ROW). The others would be planted on private property on the northwest corner of the site. This area is dominated by Himalayan blackberry. Himalayan blackberry bushes would be cleared, and the area would be replanted with native trees and shrubs, as described in Section 7 of the BA (Amendments to Standard Specifications Section 01040.42). Plantings would be maintained for the duration of the plant establishment period (3 years), through watering, replacing dead plants as needed, and removing blackberry plants from the planting area.

A small amount of riprap for the stormwater ditches would be added below the 2-year flood elevation. While no significant impacts are expected from the introduction of riprap, the removal of the existing piers from the channel and construction of vegetated swales for stormwater runoff should compensate for the negative effects of the riprap. Aquatic habitat and water quality conditions in the project area are expected to improve as a result of the treatment of stormwater by vegetated bio-swales. The stream channel will be allowed to flow more normally due to the removal of the concrete piers, increasing the channel capacity by 2 meters.

### **1.3 Biological Information and Critical Habitat**

The listing status and biological information for UWR steelhead are described in Busby et al. (1996) and NMFS (1997). The listing status and biological information for UWR chinook salmon are described in Myers et al. (1998). The NMFS designated critical habitat for UWR steelhead and UWR chinook salmon on February 16, 2000 (65 FR 7764) and applied protective regulations under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The adjacent riparian zone is included in this critical habitat designation.

Critical habitat for UWR steelhead includes the Willamette River and its tributaries above Willamette Falls upstream to and including the Calapooia River. Critical habitat for UWR chinook salmon includes the Clackamas River and the Willamette River and its tributaries above Willamette Falls. Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas (areas adjacent to a stream that provide the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter) below longstanding, natural impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) and several dams that block access to former UWR steelhead and UWR chinook salmon habitat. The proposed action will occur within designated critical habitat for UWR steelhead and UWR chinook salmon.

Hamilton Creek provides spawning, rearing, and migratory habitat for both adult and juvenile life stages of UWR steelhead. Juvenile UWR steelhead are expected to be rearing in the project areas during demolition and replacement of the bridge. UWR chinook salmon are not known to spawn in these streams; however, some juvenile rearing may occur in the lower portion of

Hamilton Creek (telephone conference with Wayne Hunt, ODFW, January 29, 2002). Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitat for the species are: 1) Substrate, 2) water quality, 3) water quantity, 4) water temperature, 5) water velocity, 6) cover/shelter, 7) food (juvenile only), 8) riparian vegetation, 9) space, and 10) safe passage conditions (50 CFR 226.212). The essential features that the proposed project may affect are substrate, water quality, and riparian vegetation resulting from project activities.

UWR steelhead in Hamilton Creek are both summer and winter-run fish, which typically enter mainstem rivers in November and December with the majority arriving in Hamilton Creek between January and May. UWR steelhead spawning activity usually occurs from February through May with a peak in late March with the majority of the spawning occurring above the project area. Steelhead fry would have all emerged from the gravel by the end of June.

#### **1.4 Evaluating Proposed Action**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the: 1) Definition of the biological requirements and current status of the listed species, and 2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action, 2) the environmental baseline, and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and



adult migration, spawning, and rearing of the UWR steelhead and UWR chinook salmon under the existing environmental baseline.

#### **1.4.1 Biological Requirements**

The first step the NMFS uses when applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. The NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list UWR steelhead and UWR chinook salmon for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for UWR steelhead and UWR chinook salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. UWR steelhead and UWR chinook salmon survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NMFS defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a "habitat approach" to its analysis (NMFS 1999). The current status of the UWR steelhead and UWR chinook salmon, based upon their risk of extinction, has not significantly improved since the species were listed.

#### **1.4.2 Environmental Baseline**

The environmental baseline is an analysis of the effects of past and on-going human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as, "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The action area for this consultation, therefore, includes the streambed and streambank of Hamilton Creek within the area of disturbance at the project site and downstream to the extent of visible short-term turbidity increases resulting from the project work. Hydraulic analysis indicates that the Hamilton Creek Bridge is not scour critical, therefore, no riprap is planned to armor the banks around the foundation. Impervious surface would increase in the project area by 690m<sup>2</sup>, which could result in impacts after the project is completed.

The current population status and trends for UWR steelhead are described in Busby et al. (1996) and in NMFS (1997), while those for UWR chinook salmon are described in Myers et al. (1998). In general, the current status of UWR steelhead and UWR chinook salmon populations is the result of several long-term, human-induced factors (e.g. habitat degradation, water diversions, hydropower dams) that serve to exacerbate the adverse effects of natural environmental variability from such factors as drought, floods, and poor ocean conditions.

Hamilton Creek is listed as water quality limited for temperature by Oregon Department of Environmental Quality (ODEQ). The stream reach is considered to be lacking in large woody debris (LWD) and the potential for future LWD recruitment is low. Substrates in Hamilton Creek show a preponderance of fine sediments and embedded substrates.

## **1.5 Analysis of Effects**

### **1.5.1 Effects of Proposed Action**

The proposed action, as described above in Section 1.2, is to demolish and replace an existing bridge on Hamilton Creek. The demolition and construction of a new bridge is expected to result in minimal disturbance of stream substrate, and therefore minimal displacement of any sediment which may be present in the stream substrate. Even though substrate disturbance is expected to be minimal, some short term turbidity may occur in Hamilton Creek. The short-term increase in turbidity could result in temporarily reduced feeding efficiency for juvenile salmonids in the project area and for a short distance downstream.

The ODFW preferred in-water work period for Hamilton Creek is between June 1 and September 30 (ODFW 2002). However, since juvenile UWR steelhead rear in Hamilton Creek year-round, they would be expected to be present in the project area even during that time frame, therefore, there is the possibility that undertaking elements of the project (demolition, de-watering, and construction) could result in injury or mortality during the fish removal process. There is the potential for juvenile UWR chinook to be in Hamilton Creek, however, they are not expected to be in the project area during in-water work. Direct mortality of juvenile UWR steelhead is expected to be minimal, because the work will be isolated from the stream and fish removal will occur within coffer dams.

As described above, UWR steelhead in the project areas are both summer and winter-run fish, which typically enter the mainstem rivers in November and December with the majority arriving between January and March. Based on past surveys by ODFW, UWR steelhead spawning activity usually occurs from February through May with a peak in late March in the project area. Steelhead fry would have all emerged from the gravel by the end of June. Therefore, no UWR steelhead adults, incubating eggs, or pre-emergent fry are expected to be present in Hamilton Creek during project implementation.

UWR chinook salmon are not known to spawn in Hamilton Creek, although some juvenile rearing is reasonably certain to occur. Since isolation of the work area will likely cause some

short term increase in turbidity in the project area and there is the potential for fish entrapment within this work area, the action is “likely to adversely affect” (LAA) UWR chinook salmon and UWR steelhead or their critical habitat within Hamilton Creek.

#### Demolition and construction.

The demolition and removal work would be accomplished from the banks with no equipment entering the active channel of Hamilton Creek. The concrete piers, timber end-bent pilings, and backwalls would be removed from the banks and any falling debris would be captured and taken to an approved upland site. Chemical contamination may occur if a hazardous material spill occurs while the equipment is adjacent to Hamilton Creek. However, precautionary measures would be taken to minimize the potential for this to occur. Substrate would be impacted by the removal of the piers. Any trenches or holes resulting from this removal would be filled with clean, river-run gravel. Removing the two, 1.0 m wide concrete piers from the channel would result in a net gain of 2 m of functional channel width. Activities that cause disturbances may include drilling the shaft foundations and operating demolition equipment (pneumatic hammer and pumps to de-water in-stream work areas). Because rearing anadromous fish are reasonably certain to occur in the project area during construction, disturbance may cause them to relocate outside the project area, potentially resulting in unnecessary energy expenditures and decreased juvenile survival. However, the timing of construction, small size of the disturbance area, use of best management practices, and the limited duration of these activities should minimize impacts on juvenile steelhead and chinook salmon. While some fish may be affected enough to alter their normal rearing habits, it is unlikely that the disturbances associated with the construction project are likely to have any negative, long-term effects on either the individual fish or the local population of salmonids. During fish removal there is an increased chance for handling and direct mortality.

#### Ground disturbance and riparian impacts.

Approximately 2,020 m<sup>2</sup> of ground would be cleared of vegetation and grubbed. After the road and bridge construction was complete, about 1,100 m<sup>2</sup> of the cleared area would be available for replanting. Additionally, an area on the northwest corner of the site would be cleared of Himalayan blackberry and replanted. Construction would require removal of approximately 13 trees, resulting in a slight, localized loss of shade to the wetted channel. Most of the trees that would be removed are more than 15 meters from the 2-year flood elevation and provide shade only in the very early morning and late evening hours, not significantly affecting local riparian shading. The five trees that grow immediately adjacent to the wetted channel are relatively small (<30 cm dbh) and their removal would significantly reduce stream shading on a very local scale, but would not affect water temperatures appreciably. These trees would be replaced with fast-growing alders in areas near the stream channel and a mix of deciduous and coniferous trees in areas farther from the channel. In 5 to 10 years, riparian shading should exceed current levels.

The proposed project also has the potential to cause fine sediments to be transported into the action area. However, because of the limited amount of clearing and implementation of an erosion control plan, the amount of runoff or erosion is not expected to cause turbidity increases that are detectable beyond background levels.

#### Road widening and installation of vegetated bioswales

The proposed road widening would result in approximately 690 m<sup>2</sup> of additional impervious surface. Stormwater, which currently runs directly off the bridge onto the banks of the creek, would drain through a riprap-lined ditch into a biofilter drainage swale. Riparian planting and the addition of bioswales should result in locally improved water quality over the long term. Road widening on the south side of the creek may have minor impacts on some local floodplain functions, but mitigation planting would yield an improvement in local riparian conditions.

Approximately 26 m<sup>2</sup> of streambank on the north side of the bridge would be altered by the addition of Class 25 riprap to stabilize the banks of the current drainage ditches to the new design of the roadway. This limited amount of riprap would not confine or alter the channel enough to cause any downstream erosion, or significantly affect nutrient exchange between the riparian area and flowing water. Because the riprap is isolated from the wetted width of Hamilton Creek during low summer flows, it would not contribute to solar conductive heating of the stream during the summer months. Native grasses would be planted along the roadside to vegetate ditches and slopes and allow for better infiltration of stormwater runoff. As noted in the BA (Section 7.1) erosion control matting will be applied to prevent soils from eroding and entering Hamilton Creek and seeding and mulching will occur throughout the project site. Conservation measures for this project will follow practices outlined in ODOT's *Standard Specifications for Highway Construction* (1996) and the *Supplemental Standard Specifications for Highway Construction* (1998).

The proposed road widening and bridge replacement may have slight effects on a local scale. Because the widening on the south side of the bridge would occur within the floodplain, it could potentially cause minor disruption to normal water transport and nutrient cycling in and out of the floodplain. However, the area to be covered by the new road grade is a small percentage of the local floodplain, and has been disturbed by agriculture practices.

#### **1.5.2 Cumulative Effects**

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes the streambed and streambank of Hamilton Creek within the area of disturbance at the project site and downstream to the extent of visible short-term turbidity increases resulting from the project work. NMFS is not aware of any specific future actions which are reasonably certain to occur on non-Federal lands within the Hamilton Creek watershed.

## **1.6. Conclusion**

NMFS has determined that, when the effects of the bridge replacement project addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, it is not likely to jeopardize the continued existence of UWR steelhead or UWR chinook salmon. Additionally, NMFS concludes that the subject action would not cause adverse modification or destruction of designated critical habitat for UWR steelhead or UWR chinook salmon. NMFS believes that the proposed actions would cause a minor, short-term increase in stream turbidity in Hamilton Creek. Although direct mortality of juvenile UWR steelhead and UWR chinook salmon from these projects is reasonably certain to occur during in-water work, it is expected that the level of mortality would be minimal and would not result in jeopardy. NMFS expects that the net effect of the proposed action will be to maintain or help restore properly functioning habitat conditions in the project area of Hamilton creek.

These conclusions are based on the following considerations: 1) The action area does not provide holding or spawning habitat for adult UWR chinook salmon or UWR steelhead, 2) in-water work would occur during the ODFW preferred work window (June 1 through September 30), which should reduce the likelihood of UWR chinook salmon and UWR steelhead in the action area due to high water temperatures and low flows, 3) increases in sedimentation and turbidity to the lower portion of Hamilton Creek would be short-term and minor in scale and would not change or worsen existing conditions for stream substrate in the action area, 4) long-term beneficial effects are expected due to the anticipated reduction in sedimentation and turbidity from scour reduction, reduction in the number of bents in the channel and stormwater treatment of bridge deck run-off prior to reaching Hamilton Creek, and 5) enhancement of riparian functions resulting from planting trees and vegetation and blackberry removal.

## **1.7 Reinitiation of Consultation**

Reinitiation of consultation is required if: 1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion, 2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered, or 3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

## **2. INCIDENTAL TAKE STATEMENT**

Section 4(d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (50 CFR 222.102; October 1, 2000). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not

limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

## **2.1 Amount or Extent of Take**

The NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of UWR steelhead and UWR chinook because of detrimental effects from increased sediment levels and the potential for direct incidental take during in-water work. Effects such as temporarily increased sediment levels are largely unquantifiable in the short-term, and are not expected to be measurable as long term harm to steelhead behavior or population levels. NMFS expects the possibility exists for handling UWR steelhead and UWR chinook during the work isolation process resulting in incidental take to individuals during the construction period. NMFS anticipates that incidental take of up to 25 juvenile UWR steelhead and 25 UWR chinook could occur as a result of the work isolation process. The extent of the take is limited to UWR steelhead and UWR chinook within the action area.

## **2.2 Reasonable and Prudent Measures**

The NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of UWR steelhead resulting from the action covered by this Opinion. The FHWA shall require the following measures:

1. Minimize the likelihood of incidental take from in-water work by timing the completion of all in-water work as necessary to avoid harming vulnerable salmon life stages, including migration and rearing.
2. Minimize the likelihood of incidental take from in-water work by ensuring that the in-water work area is isolated from flowing water. Demolition should be done as outlined in the demolition and containment plan approved by ODFW and NMFS.
3. Ensure effectiveness by requiring all erosion control measures and plantings for site restoration to be monitored and evaluated both during and following construction.

## 2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the FHWA must require the applicant and/or their contractors to comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. To implement Reasonable and Prudent Measure #1 (in-water timing), the FHWA shall ensure that:
  - a. All work within the active channel that could potentially contribute sediment or toxicants to downstream fish-bearing systems will be completed within the ODFW approved in-water work period.<sup>1</sup>
  - b. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved by biologists from NMFS.
2. To implement Reasonable and Prudent Measure #2 (isolation of in-water work area), the FHWA shall ensure that during pier removal, the work area is well isolated from the active flowing stream within a coffer dam, or similar structure, to minimize the potential for sediment movement.
  - a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
    - i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
    - ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
    - iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.
    - iv. Seined fish must be released as near as possible to capture sites.
    - v. If a dead, injured, or sick listed species specimen is found, initial notification must be made to the National Marine Fisheries Service Law Enforcement Office, in the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; or call: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective

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<sup>1</sup> Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)([http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600\\_inwtrguide.pdf](http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf)).

treatment and care. Dead specimens should be handled to preserve biological material in the best possible state for later analysis of cause of death. With the care of sick or injured listed species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.

- vi. The FHWA shall ensure that no ESA-listed fish to are transferred to third parties other than NMFS personnel without prior written approval from the NMFS.
- vii. The FHWA shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.
- viii. The FHWA must allow the NMFS or its designated representative to accompany field personnel during the seining activity and allow such representative to inspect the seining records and facilities.
- ix. A description of any seine and release effort will be included in a post project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

3. To implement Reasonable and Prudent Measure #3 (monitoring and reporting), the FHWA shall ensure that:

- a. Within 120 days of completing the project, the FHWA shall ensure submittal of a monitoring report to NMFS describing the FHWA's success meeting their permit conditions. This report will consist of the following information.

- i. Project identification.

- (1) Project name.
  - (2) Starting and ending dates of work completed for this project.
  - (3) The FHWA contact person.
  - (4) Monitoring reports shall be submitted to:

National Marine Fisheries Service  
Oregon State Branch, Habitat Conservation Division  
Attn: OSB2001-0101-FEC  
525 NE Oregon Street, Suite 500  
Portland, Oregon 97232-2778

- ii. Isolation of in-water work area. A report of any seine or electrofishing and release activity including:

- (1) The name and address of the supervisory fish biologist.



- (2) Methods used to isolate the work area and minimize disturbances to ESA-listed species.
  - (3) Stream conditions before and following placement and removal of barriers.
  - (4) The means of fish removal.
  - (5) The number of fish removed by species.
  - (6) The location and condition of all fish released. Any incidence of observed injury or mortality.
- iii. Pollution and erosion control. Copies of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
- iv. Site restoration. Documentation of the following conditions:
  - (1) Finished grade slopes and elevations.
  - (2) Log and rock structure elevations, orientation, and anchoring, if any.
  - (3) Planting composition and density.
  - (4) A plan to inspect and, if necessary, replace failed plantings and structures for three years.
- v. A narrative assessment of the project's effects on natural stream function.
- vi. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) before, during and after project completion.
  - (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
  - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
  - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

### **3. MAGNUSON-STEVENSON ACT**

#### **3.1 Background**

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed actions may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

### **3.2 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

### **3.3 Identification of EFH**

The Pacific Fisheries Management Council (PFMC) has designated EFH for Federally-managed fisheries within the waters of Washington, Oregon, and California. Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and

longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years)(PFMC 1999).

Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*O. tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

### **3.4 Proposed Action**

The proposed action is detailed above in Part 1.2. The "action area" for this consultation includes the streambed and streambank of Hamilton Creek within the area of disturbance at the project site and downstream to the extent of visible short-term turbidity increases resulting from the project work. This area has been designated as EFH for chinook salmon.

### **3.5 Effects of Proposed Action**

Spring chinook salmon spawn downstream of the confluence of Hamilton Creek and the South Santiam River, but due to the lack of spawning habitat in Hamilton Creek primarily use it for rearing as juveniles. Information submitted by the FHWA in its request for consultation and additional information provided by ODOT is sufficient for NMFS to conclude that the effects of the proposed action is likely to adversely effect EFH in the short term. NMFS also believes that the conservation measures proposed as an integral part of the action would avoid, minimize, or otherwise offset potential adverse impacts to designated EFH.

### **3.6 Conclusion**

The NMFS believes that implementation of the bridge replacement project in Hamilton Creek may adversely affect designated EFH for chinook salmon.

### **3.7 EFH Conservation Recommendations**

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely

affect EFH. However, because implementation of the subject action is likely to adversely affect designated EFH for chinook salmon, and the conservation measures proposed minimize and offset these impacts, the NMFS has no conservation recommendations at this time except those outlined in the Terms and Conditions of this Opinion.

### **3.8 Statutory Response Requirement**

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. However, since NMFS did not provide conservation recommendations for this action, a written response to this consultation is not necessary.

### **3.9 Consultation Renewal**

The FHWA must reinitiate EFH consultation with NMFS if either the action is substantially revised or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

## **4. LITERATURE CITED**

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this in addition to the BA and additional information requested by NMFS and provided by the NRCS.

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